

CLAIMS

We claim:

- 5 1. A method of producing analgesia in a mammal experiencing pain,
comprising administering to the mammal a synergistically
analgesic effective combination of an opioid analgesic agent and
a compound that binds to the SS1 or SS2 subunit of a sodium channel
in a pharmaceutically suitable vehicle.
- 10 2. The method of claim 1, wherein the opioid is selected from
the group consisting of morphine, codeine, methadone and
fentanyl.
- 15 3. The method of claim 1, wherein the opioid and the compound
that binds to the SS1 or SS2 subunit of a sodium channel are
administered together in one single dosage form at
synergistically analgesic effective doses.
- 20 4. The method of claim 1, wherein the opioid and the compound
that binds to the SS1 or SS2 subunit of a sodium channel are
administered in separate dosage forms at synergistically

analgesic effective doses.

5. The method of claim 1, wherein the administering is intrathecally or intramuscularly.

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6. The method of claim 1, wherein the compound that binds to the SS1 or SS2 subunit of a sodium channel is tetrodotoxin or a derivative thereof.

7. The method of claim 1, wherein the opioid is morphine.

8. The method of claim 7, wherein the opioid is morphine.

9. The method of claim 6, wherein the effective dose of
15 tetrodotoxin is from 0.01 µg per kilogram body weight to 20 µg
per kilogram body weight.

10. The method of claim 8, wherein the effective dose of morphine
is from 0.002 mg per kilogram body weight to 20 mg per kilogram
20 body weight.

11. The method of claim 6, wherein the sodium channel blocking

compounds is a composition comprising at least one of tetrodotoxin, anhydrotetrodotoxin, tetrodaminotoxin, methoxytetrodotoxin, ethoxytetrodotoxin, deoxytetrodotoxin or tetrodonic acid.

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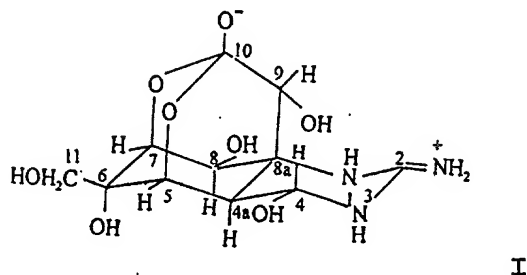
12. The method of claim 1, wherein the compound that binds to the SS1 or SS2 subunit of a sodium channel is saxitoxin or a pharmaceutically acceptable salt thereof.

13. The method of claim 12, wherein the effective dose of saxitoxin is from 0.01 µg per kilogram body weight to 20 µg per kilogram body weight.

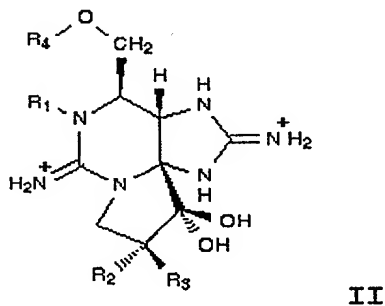
14. The method of claim 13, wherein the saxitoxin is a compound
15 comprising a tetrahydropurine moiety composed of two guanidine units fused together in a stable azaketal linkage, having a molecular formula $C_{10}H_{17}N_7O_4$.

15. A pharmaceutical composition comprising an opioid and a
20 sodium channel blocker that specifically binds to the SS1 or SS2 subunit of a sodium channel and a pharmaceutically acceptable carrier.

16. The pharmaceutical composition of claim 15, wherein the sodium channel blocker is tetrodotoxin represented by the formula I below:



17. The pharmaceutical composition of claim 15, wherein the sodium channel blocker is saxitoxin represented by the formula II below:



18. The pharmaceutical composition of claim 15, wherein the opioid is selected from the group consisting of morphine, codeine, methadone and fentanyl.

5 19. The pharmaceutical composition of claim 16, wherein the opioid is selected from the group consisting of morphine, codeine, methadone and fentanyl.

20. The pharmaceutical composition of claim 15, wherein the sodium channel blocker and the opioid are present in a ratio by weight of from 1:100 to 1:30,000.